Preparation and Review of Risk Assessments under O. Reg 153/04

February 2006

Protecting our environment.

Ontario

Overview

- Status of MOE activities supporting the use of risk assessment
- Understanding the process of risk assessment submission and review
- Common problems and how to avoid them

What is Risk Assessment?

- Option available to property owners when the site condition does not meet standards specified in the regulation
- Property-specific standards specified in a risk assessment may be used as less stringent alternatives to MOE site condition standards when filing an RSC
- Standards specified in a risk assessment must be accepted by the Director following MOE review of the risk assessment
- If risk management measures are also included, the Director may issue a Certificate of Property Use (CPU) to describe the necessary measures and responsibilities

Supporting Activities

- The MOE has provided training and outreach to support the use of risk assessment under O. Reg. 153/04 through presentations, printed and web-based products:
  - September 2004 - Introductory Webcast
  - 2 web-based self-directed learning courses through NORCAT
    - Brownfields 1 – Risk Assessment
    - Brownfields 2 – Mandatory Filing of RSC
  - Presentations
  - Ministry Publications
- Find these on http://www.ene.gov.on.ca/envision/land/decomm/condition.htm

MOE Brownfields Publications

- 2 Referenced documents (part of the regulation)
  - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*, March 9, 2004
  - Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004
- 6 Technical Updates (guidance); 4 related to risk assessment
- 2 Forms
  - Risk assessment pre-submission form
  - Application for Director's Permission to Use Alternate Analytical Methods
- 2 Guidance documents
  - Records of Site Condition A Guide on Site Assessment, the Cleanup of Brownfield Sites and the Filing of Records of Site Condition
  - **Procedures for the Use of Risk Assessment under Part XV.1 of the Environmental Protection Act - new December 2005**

Progress

- Since October 1, 2004, the MOE has received and reviewed:
  - 54 Pre-Submission Forms (6 in progress)
  - 31 Risk Assessment Reports (13 in progress)
- Time for Pre-Submission Form (PSF) review
  - Expect 4 to 8 weeks
- Time for risk assessment review process
  - Average time for MOE review - 12 weeks
  - Average time with Qualified Person (QP) for revisions -10 weeks
- PSF could be better utilized to reduce risk assessment revision time

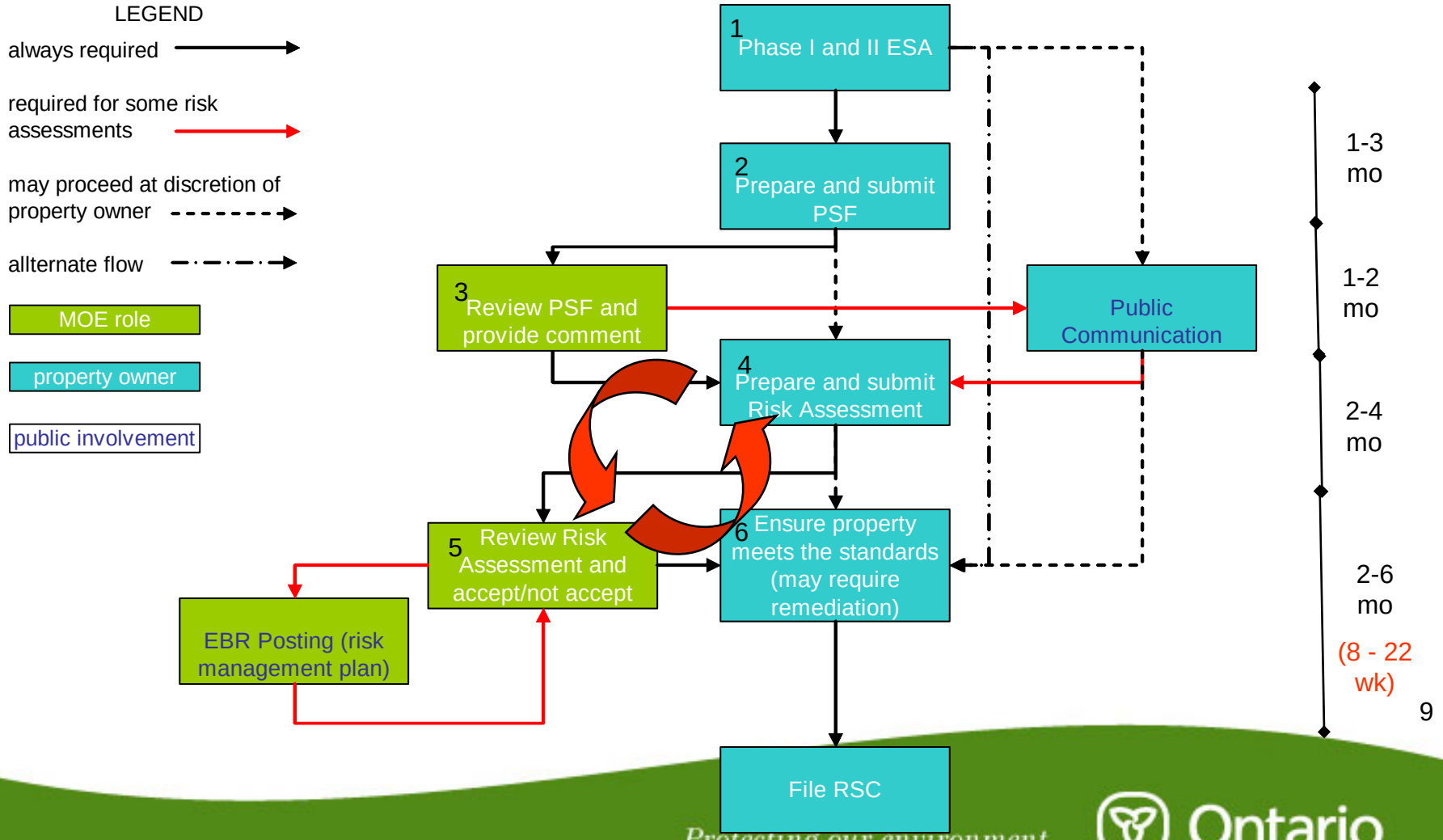
Benefits of Risk Assessment Approach

- Allows more projects to proceed to redevelopment
  - Reduced cost
  - Clarified residual risk/liability
- Another tool to manage overall project risk - balance cost versus benefit among options
  - Further site assessment
  - Remediation to more stringent standards
  - Risk management measures and restrictions on property use
- Public is assured of a consistent level of protection

Stakeholders Concerns

- Process takes too long
- Uncertain of outcome
  - Cost
  - Acceptance by the MOE
  - Acceptance by the property/insurance/finance market
- Manage through stakeholder education:
  - Understand process and how it can be used to benefit a particular project
- Address through continuous improvement process
  - Participate with stakeholders in a contaminated land risk assessment “Community of Practice”

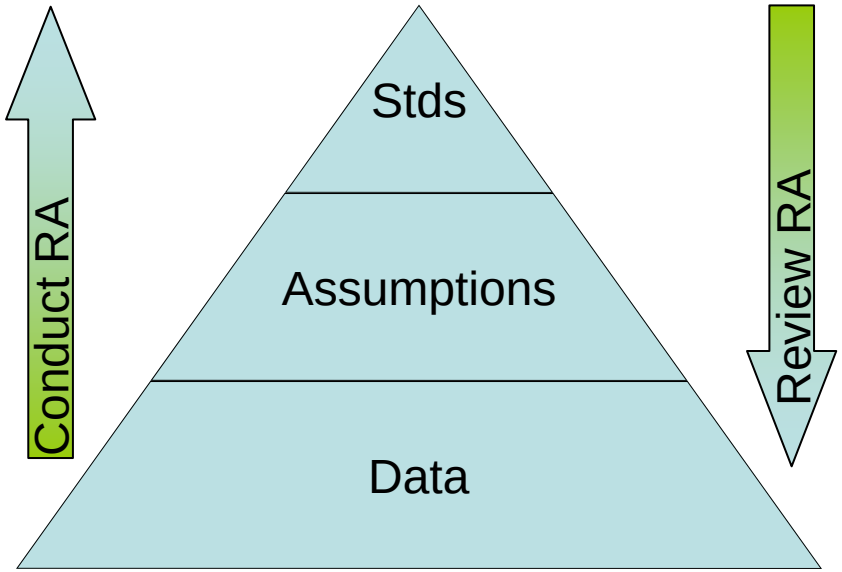
Risk Assessment Submission and Review Process



Understanding the risk assessment review process

- How are risk assessments reviewed?
  - The review is undertaken by an MOE team consisting of a review co-ordinator and experts in
    - Geoscience/hydrogeology
    - Human health toxicology
    - Ecological toxicology
    - Risk management (generally geoscience and/or engineering)
- The outcome is MOE **approval of the property-specific standards** (soil and ground water concentrations) for use in the RSC
- The means to achieve the standards (remediation) are not approved through O.Reg. 153/04

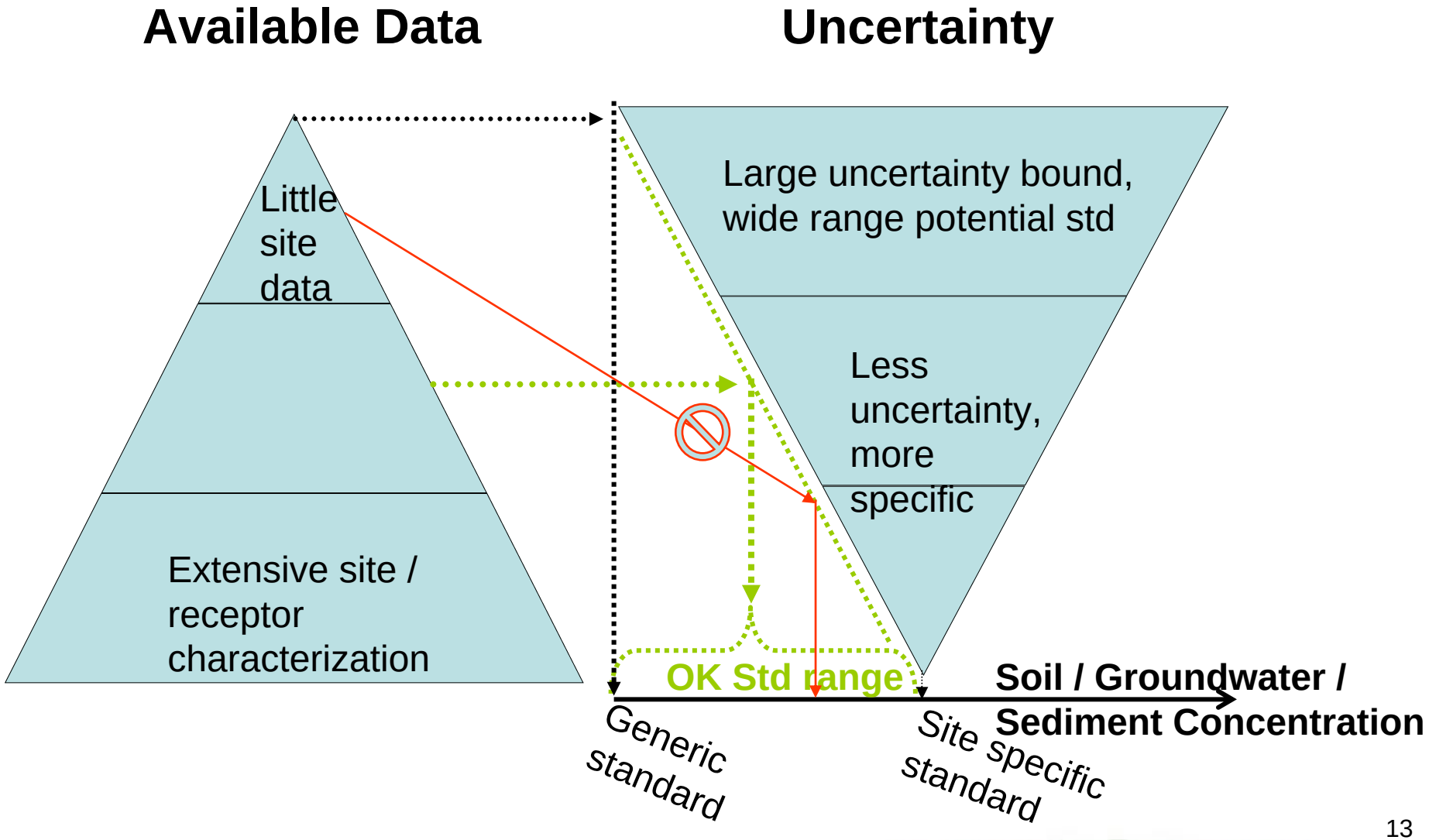
Understanding the risk assessment review process

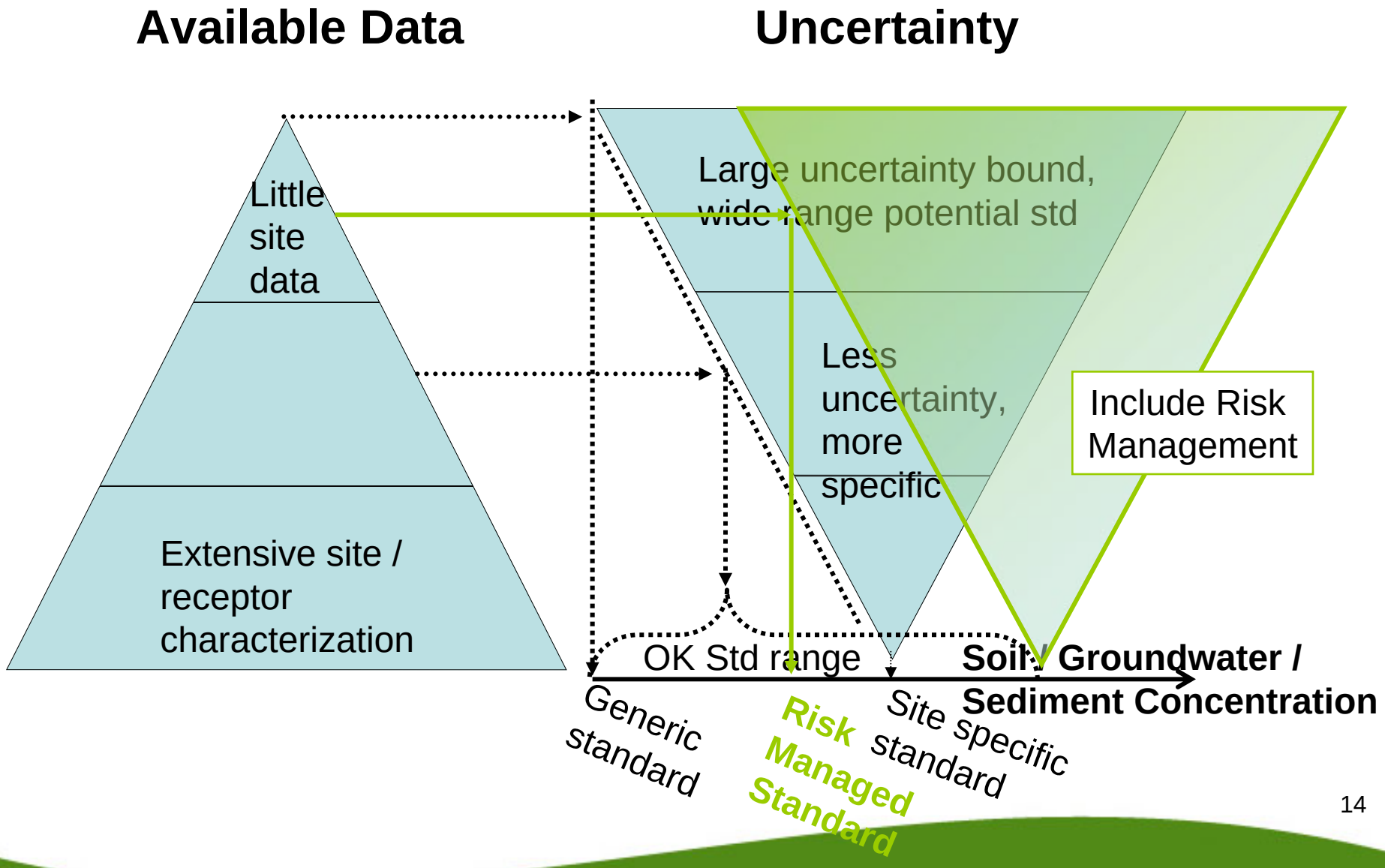


- What standards are proposed?
- What assumptions / concepts do the standards rely on to be acceptable?
- Is there sufficient data or conservatism to support assumptions (and therefore to support the standards)?

Understanding the risk assessment review process

- A standard is accepted if the site data and toxicology support it;
  - Lack of site data creates uncertainty
  - Conservative model assumptions can compensate for uncertainty, but result in low concentrations as standards (more stringent to meet)
- A standard may be developed through repeated collection of data and refinement of the exposure models according to the needs of the project.



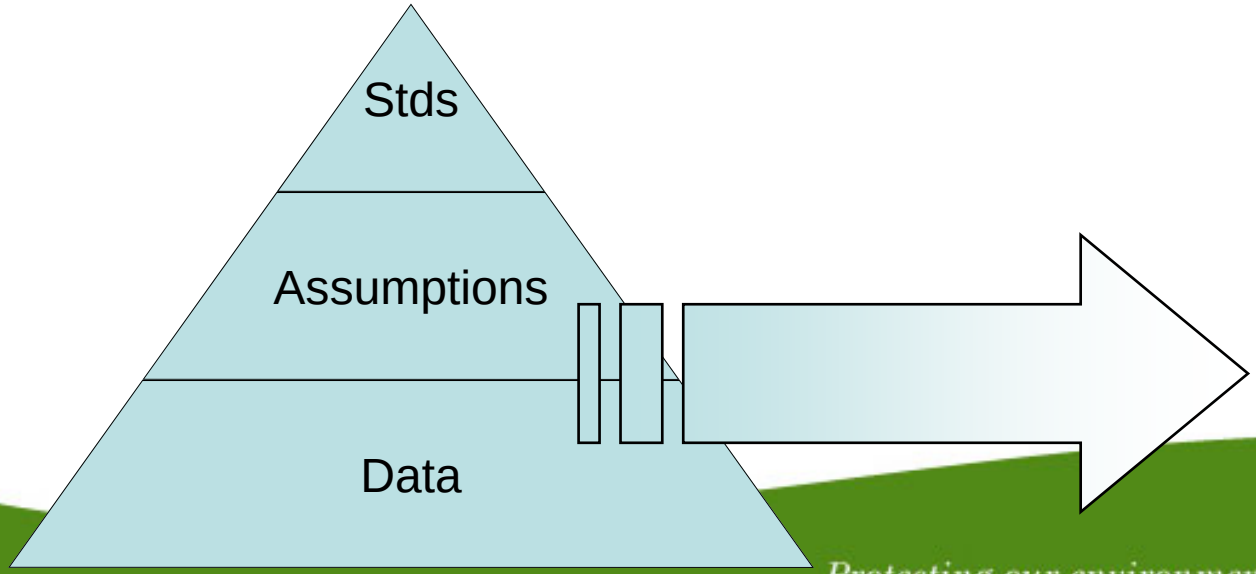


Making it Work for Your Project

- Transparency, clarity, communication
  - Distinguish between **risk assessment** and **risk management**
    - Ensure risk management is both necessary and appropriately focussed (pathway, control, contingency)
  - Ensure public concerns are addressed
  - Put significant effort into developing, supporting and communicating an appropriate **Conceptual Site Model**

What is a Conceptual Site Model?

- A communication tool
- A visual presentation and interpretation of the data and assumptions, including explanatory text, supporting the risk model and proposed standards

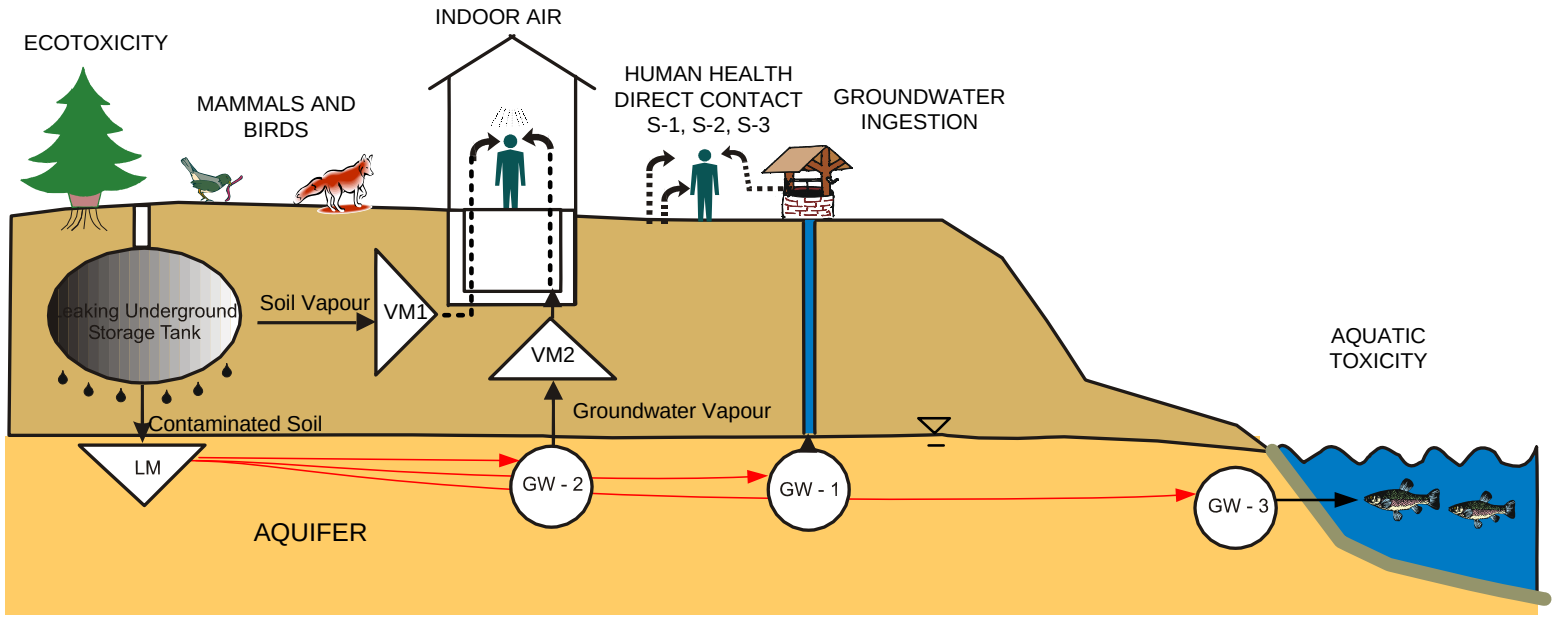


Conceptual Site Model (CSM)

Example of CSM

COMPONENT APPROACH

GW1: ground water for drinking purposes
GW2: ground water to indoor air
GW3: ground water to surface water
LM: leaching model - soil to ground water + groundwater to well
VM1: soil to indoor air
VM2: groundwater to indoor air



Common Problem Areas

- Communicating the Conceptual Site Model
  - The PSF leads the Qualified Person through the thought process
  - Must also explain assumptions, clarify and justify in separate text
  - Are the contaminant inventories, drawings and exposure pathway tables consistent?
  - Are all assumptions illustrated?
  - Are there uncertainties in your approach?
- The PSF review is a consultation process, not an approval!

Common Problem Areas

- Making the Best Use of the PSF
  - Consultation with the MOE; provide sufficient information and explanation with the PSF so ministry reviewers can provide helpful comment
  - Ensure all documentation included and sent to **Environmental Assessment and Approvals Branch**
  - Only property owner can submit risk assessment to the ministry; provide proof of business name and property ownership and sign the PSF to certify that the QP conducts the risk assessment on their behalf
  - The same QP must sign the PSF and the risk assessment report certifications

Common Problem Areas

- Selecting the right contaminants of concern (COC)
  - Compare to Table 1 for environmentally sensitive area (both human health and ecological assessments)
  - Assess, for both human health and ecological risk, all contaminants which will not meet generic standards in Table 1 – 5 **when RSC is submitted**
  - Others at discretion of QP; should provide supporting discussion for MOE comment in the PSF
  - Any contaminants not specified in risk assessment **must** meet Tables 1 – 5 for submission of a RSC.
- Always include an Ecological Risk Assessment
  - Communicate any limitations to future owners (ability to sustain landscaping as a minimum)

Summary

- It is important to understand the process of risk assessment submission and review to make best use of the risk assessment option
- Plan far enough in advance (1 year recommended)
- The ministry is available to assist in ensuring the project meets regulatory requirements via consultation through the PSF and questions to the risk assessment review coordinator
- QP community is encouraged to participate with the MOE in ongoing development of best practices in risk assessment